

SHVARTS, YA. M.

AID Nr. 967-9 15 May

ELECTROSTATIC FIELD INTENSITY OF THE SURFACE OF A GEOPHYSICAL
ROCKET (USSR)

Imyanitov, I. M., G. D. Gdalevich, and Ya. M. Shvarts. IN: Akademiya nauk
SSSR. Doklady, v. 148, no. 6, 1963, 1306-1308. S/020/63/148/006/013/023

The electrostatic field intensity near the surface of a geophysical rocket launched
15 November 1961 was measured by means of an electrostatic fluxmeter.
The equipment measurement range was ± 6 v/cm. The readings of two symmet-
rically placed fluxmeter pickups, although differing from each other, showed
that field intensity undergoes relatively slight variations with altitude. The in-
tensity value measured by one of the pickups varied within the range of 0.5 to
1 v/cm, and that of the other from 1.8 to 2.5 v/cm. The second pickup was il-
luminated by the sun at an angle of 4° throughout the flight, while the first re-
mained in the shade. The electric field intensity corresponding to the charge
on the rocket itself had an average value of 1.5 v/cm. After taking into account
measurement errors and inaccuracies in the determination of the real value of

Card 1/2

AID Nr. 967-9 15 May

ELECTROSTATIC FIELD INTENSITY [Cont'd]

S/020/63/148/006/013/023

intensity, the average value of the electrostatic field produced by the charge of the rocket was found to be < 2 but > 1 v/cm, i. e., the rocket had a negative charge. Measurements of electron concentration, together with data on field intensity, made it possible to determine that the potential produced by the rocket's own charge amounted to several volts. At an altitude of 200 to 300 km, it was determined that the electric field was < 3.6 but > 1.6 v/cm according to the second pickup and < 1.2 but > 0.1 v/cm according to the first pickup. It was concluded that during the experiment an electric field intensity of the order of 10^{-3} v/cm existed in the ionosphere. [DW]

Card 2/2

SHVARTS, Ye., [Svarce, E.]; IYEVIN'SH, A. [Ievins, A.]

Extraction of boric acid from diluted solutions in the form
of borotartrates. Izv. AN Latv. SSR no. 4:67-71 '61.
(MIRA 16:1)

1. Institut khimii AN Latvyskoy SSR.

(Tartrates) (Boric acid) (Extraction(Chemistry))

SHVARTS, Ye.; DAMASKIN, B.B.; FRUMKIN, A.N.

Nature of the hump on the differential capacitance curves.
Zhur. fiz, khim. 36 no.11:2419-2427 N'62. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SHVARTS, I. I.; MELNIK, A.; LEVIN'SH, I. [levins, A.]

Complex formation in solutions of tartaric and boric acid
mixtures. Zhur. neorg. khim. 10 no.5:1185-1185 My '65.
(MIRA 18:6)

IOFF, I.G.; GERSHKOVICH, N.L.; ZAGNIBORODOVA, Ye.N.; LABUNETS, N.F.;
LEBEDEV, A.D.; MIKULIN, M.A.; SKAION, O.I.; TIFLOV, V.Ye.; SHVARTS, Ye.A.;
YURKINA, V.I.; YAGUBYANTS, I.M.

New species of fleas (Suctoria-Aphaniptera); third report. Med.paraz.i
paraz.bol. no.5:460-465 S-O '53. (MIRA 6:12)
(Fleas)

MAKAROV, N.I.; SHVARTS, Ye.A.; MAKAROVA, Ye.P.

Ectoparasites of the marmot (*Marmota baibacina*) and their significance as plague carriers. *Izv. Irk. gos. nauch.-issl. protivochum. inst.* 15:311-318 '57. (MIRA 13:7)
(PARASITES--MARMOTS) (PLAGUE)
(INSECTS AS CARRIERS OF DISEASE)

SHVARTS Ye A.
USSR / Zooparasitology. Acarina and Insect-Vectors of
Disease Pathogens.

G-3

Abs Jour : Ref Zhur - Biol., No. 8, 1958, No 33977

Author : Grebenyuk, R. V., Klassovskiy, L. N., Sartbaev, S. K.,
Shvarts, E. A., Polulyakh, P. A.

Inst : Not given

Title : A Study of the Possible Role of Ixodic Mites as Reposito-
ries and Transmitters of Pestis Bacteria. -- Izuchenie
vozmozhnoy roli iksodovykh kleshchey kak khraniteley i
perenoschikov chumnykh mikrobov.

Orig Pub : Tr. In-ta zool. i parazitol. AN KirgSSR, 1956, No. 5,
121-127.

Abstract : By biotests and individual inoculations of intestinal
contents on a nutrient medium an investigation was con-
ducted of the capacity of the mites Dermacentor pavlovskiy,
Haemaphysalis warburtoni and H. punctata to become con-
taminated with pest bacteria when fed on infected guinea
pigs, to store pest stimulants and transfer it by biting

Card 1/2

SHVARTS, Ye.A.; KUDRYAVTSEVA, K.F.; GREBENYUK, R.V.

Fleas of the eastern Tien Shan. Izv. AN Kir. SSR. Ser. biol. nauk
2 no.7:101-117 '60. (MIRA 14:6)
(TIEN SHAN--FLEAS)

ACC NR: AP7001075 (A,N) SOURCE CODE: UR/0439/66/045/001/0137/0139

AUTHOR: Krylov, D. G.; Shvarts, Ye. A.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet);
Frunze Antiplague Station (Frunzenskaya protivochumnaya stantsiya)

TITLE: Certain peculiarities of the distribution of fleas in the
Issyk-Kul region and their relation to the distribution of rodents and
other mammals

SOURCE: Zoologicheskij zhurnal, v. 45, no. 1, 1966, 137-139

TOPIC TAGS: ~~geography~~, zoogeography, ~~mammal~~, ~~mammalian~~ ^{ANIMAL} parasite, flea,
~~animal distribution~~ ^{BIOLOGIC} ~~ECOLOGY~~, ^{DISEASE CONTROL}, ~~RODENT~~,
~~ANIMAL DISEASE~~, ^{GEOGRAPHIC SURVEY}

ABSTRACT: Mammals and their fleas found in an area near Lake Issyk-Kul
on the Tien Shan border were studied intensively for several years in
connection with an antiplague effort. The map in Fig. 1 shows the dis-
tribution of some of these animals and their fleas. More than 80,000
mammals and 138,000 fleas were examined. Mammal-flea associations
varied with species and with ecological zonation. Three flea species
were exclusively high-altitude species.

Card 1/3.

UDC:595.775-599.32 + 599.325:591.9

ACC NR:AP7001075

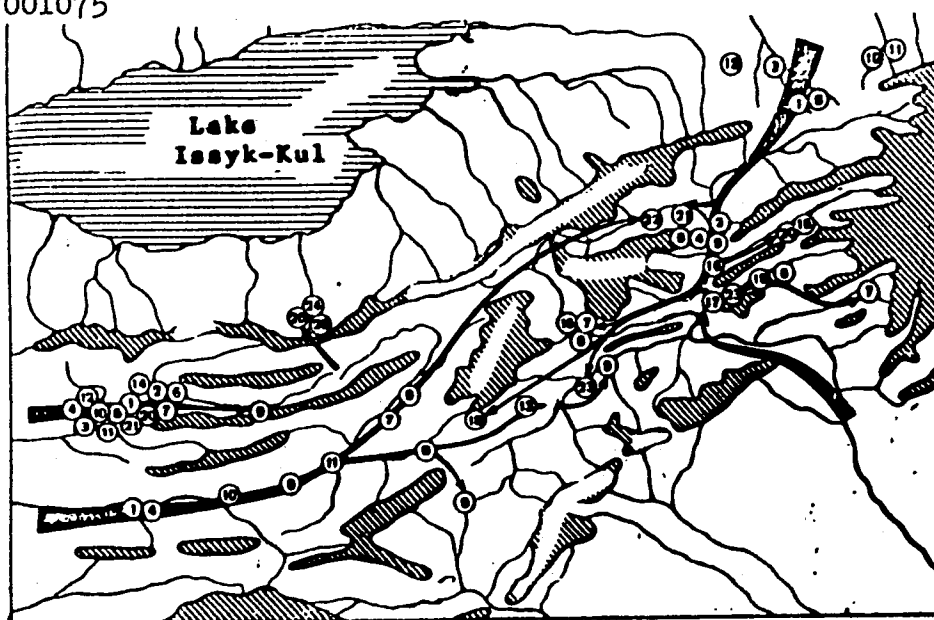


Fig. 1. Distribution pattern of some mammals and fleas along the Issyk-Kul divide

Card 2/3

ACC NR: AP7001075

1 - Tien Shan forest mouse; 2 - Afghan vole (*Ellobius fus-*
cocapillus); 3 - field mouse; 4 - wild boar; 5 - roe deer;
6 - Tien Shan birch mouse; 7 - Asiatic field mouse; 8 -
Siberian polecat; 9 - badger; 10 - *P. irritans*; 11 - *C.*
lebedewi; 12 - *A. rossica*; 13 - *P. naryni*; 14 - *R. Semenovi*;
15 - *H. glacialis*; 16 - *A. sibirica*; 17 - *L. bidentata*;
18 - *P. alatau*; 19 - *P. tiflovi*; 20 - *A. dumalis*; 21 - *S.*
suknevi; 22 - *P. elata glabra*; 23 - *P. elata. elata P.*
elata pilosa, P. elata humida; 24 - *C. penicilliger syrt*;
25 - *M. meridiana*; 26 - *P. ioffi*. Distribution routes are
shown by arrows. Orig. art. has: 1 figure. [LP]

[WA-50; CBE No. 14]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 001

Card 3/3

DAMASKIN, B.B.; SHVARTS, Ye.; FRUMKIN, A.N., akademik

Curves of differential capacitance in $K_4Fe(CN)_6$ solutions. Dokl.
AN SSSR 140 no.3:630-633 S '61. (MIRA-14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Potassium ferrocyanide--Electric properties)

SHVARTS, Ye.A.; GREBENYUK, R.V.; BERENDYAYEVA, E.L.

Material on the Aphaniptera of Dzhalal-Abad Province. Trudy Inst.
zool.i paraz.AN Kir.SSR no.7:211-218 '59. (MIRA 13:4)
(Dzhalal-abad Province--Fleas)

~~CH~~ ~~YA~~ ~~1/2~~
SHVARTS, Ye.E.

Diagnosis of gastric phlegmon. Khirurgiia no.6:88 Je '55 (MLRA 8:10)

1. Iz 2-y khirurgicheskoy kliniki Odesskogo instituta usover-
shenstvovaniya vrachey.
(STOMACH--INFLAMMATION)

SVARTS, Ye.

USSR.

Ammonium magnesium hexaborate. A. Kefana and B. Svarts. *Latsijas PSR Zinatnu Akad. Vēstis*, 1954, No. 8 (Whole No. 85), 137-42 (in Russian).— $(\text{NH}_4)_2\text{O} \cdot \text{MgO} \cdot 3\text{B}_2\text{O}_3 \cdot 7\text{H}_2\text{O}$ (I), d. 1.88, was prepd. by adding 2.5 g. MgSO_4 in 80 ml. H_2O to a soln. of 12.3 g. H_3BO_3 in 150 ml. H_2O with excess NH_4OH , and storing the mixt. for 1-2 weeks. The ppt. was washed with EtOH and Et₂O. $(\text{NH}_4)_2\text{O} \cdot \text{MgO} \cdot 3\text{B}_2\text{O}_3 \cdot 15\text{H}_2\text{O}$ (II) was prepd. similarly, but instead of being washed with EtOH, the ppt. was dried at 5° in a H_2SO_4 desiccator, 8H₂O were lost in 24 hrs. at room temp.; 3H₂O at 25-70°, NH₃ and H₂O at 100-20°, and the last 8H₂O at 120-350°. Soly. of I in H₂O was 1.308 g. per 100 ml., but the salt hydrolyzed with formation of $2\text{MgO} \cdot 3\text{B}_2\text{O}_3 \cdot 15\text{H}_2\text{O}$. Elec. cond. of aq. solns. of I and II in 3% H_3BO_3 indicated that they dissociated analogously to the corresponding K⁺ Mg hexaborate. The mobility of the anion was 39.2.

Andrew Dravnieks

MA 24

BEVARTS, Y-VG:PIYA MIKHAYLOVNA

BEVARTS, Y-VG:PIYA MIKHAYLOVNA: "The borates of alkali and alkaline-earth metals and their content in water solution. Riga, 19 5. Latvian State U, Chemistry Faculty. (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Knizhnaya Letopis'No. 47, 19 November 1955. Moscow.

SVARCS, E.

State of borates in aqueous solutions. III. Borates of the heavy metals. A. Krasins, S. Vimba, and E. Svarcs. Latvian SSR Zinatnu Akad. Vēstis 1955, No. 12, 1264 (Russian; Latvian summary).—The mobility of the anion in solns. of $\text{CdB}_2\text{O}_7 \cdot 5\text{H}_2\text{O}$, $\text{MnB}_2\text{O}_7 \cdot 8\text{H}_2\text{O}$, $\text{Ag}_3\text{B}_2\text{O}_7 \cdot 2.5\text{H}_2\text{O}$, $\text{CoB}_2\text{O}_7 \cdot 8\text{H}_2\text{O}$ (I), and $\text{MnB}_2\text{O}_7 \cdot 8\text{H}_2\text{O}$ in 3% aq. soln. of H_2BO_3 at 25° was 10.2 mho.cm.²; in similar soln. of $\text{NiB}_2\text{O}_7 \cdot 10\text{H}_2\text{O}$ (II), 8.5. In 2% soln. of H_2BO_3 , most of these borates hydrolyzed. Cryoscopic measurements indicated disocn. as follows: II $\rightarrow \text{Ni}^{++} + \text{B}_2\text{O}_7^{--}$; I and $\text{NiB}_2\text{O}_7 \cdot 8\text{H}_2\text{O}$ fully to hydroxide and H_2BO_3 ; $\text{MnB}_2\text{O}_7 \cdot 8\text{H}_2\text{O}$ to tetraborate and H_2BO_3 . Co K and Mn K dodecaborates in 2% aq. soln. of H_2BO_3 disocd. first to 2 hexaborates, then to tetraborates and H_2BO_3 . Co NH₄ and Mn NH₄ dodecaborates to tetraborate and hexaborate ions.

A. Dravnieks

PM

SHVARTS, Ye. M.

C.

USSR/Inorganic Chemistry - Complex Compounds.

Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 30279

Author : Iyevin'sh, A.F., Shvarts, Ye.M., Ozol, Ya.K.

Inst :

Title : Ammonium Pentaborate

Orig Pub : Zh. neorgan. khimi, 1956, 1, No 10, 2236-2238

Abst

: A study of some properties of $\text{NH}_4\text{B}_5\text{O}_{14} \cdot 4\text{H}_2\text{O}$ (I). On heating of I the water begins to be emitted above 80° ; in the interval $80 - 120^\circ$ three molecules of H_2O are lost and hygroscopicity of the preparation is thus increased; complete removal of water is takes place on heating at 250° . The elimination of NH_3 begins above 140° and is completed above 400° . The thermogram of I reveals endothermal effects: at $123 - 202^\circ$ (corresponding to the elimination of four molecules of water and a part of NH_3), at $279 - 305^\circ$ (elimination of almost all of NH_3) and at $432 - 439^\circ$ (apparently fusion

Card 1/2

Inst Chem - Riga

USSR / Structural Crystallography.

E-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9175

Author : Ievin'sh, A.F., Shvarts, Ye.M.

Inst : Institute of Chemistry, Academy of Sciences, Latvian SSR

Title : Certain Possibilities of Eliminating Errors Precise Determination of Parameters of the Elementary Cells of Crystals

Orig Pub : Latvijas PSR zinatnu Akadimijas Vestis, Izv. AN Latv SSR, 1956, No 2, 117-126

Abstract : In the precise determination of the parameters of the elementary cells of crystals it is necessary to eliminate errors due to eccentricity of the axis of the specimen relative to the axis of the camera, and due to variation in the length of the film during development, and also errors due to absorption. It is shown how to eliminate errors in the photography in inexact cameras for asymmetrical loading of film. To eliminate errors due to eccentricity it is proposed to introduce a correction coefficient K, calculated for the given camera experimentally using the formula:

$\Delta f = \Delta f_0 (1 - K \sin^2 \theta)$ $\Delta f = K \sin^2 \theta$

Card : 1/2

USSR / Structural Crystallography.

E-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9175

Abstract :

where α is the displacement of the interference fringes, determined experimentally from two photographs of the same substance by rotating the cover of the camera by 180° , R is the radius of the camera, ρ and $\cos \varphi$ are quantities that characterize the value of the eccentricity, and φ is the angle. Powder photographs of aluminum, LiF and lead were obtained in an inexact camera. The coefficient K was calculated from the powder pattern of aluminum. K was used then to correct the angles of the remaining patterns and to calculate the constants α . They agreed with the corresponding constants, obtained in exact cameras. The use of a microphotometer for the determination of the coordinates of the center of the diffraction line, as shown by measurements of the powder patterns of NaCl, LiF, TiCl and Al, has no special advantages over visual methods, but with the aid of a microphotometer one obtains results that are in closer agreement than in visual measurements.

Card : 2/2

SVARCA, E.

State of borates in aqueous solutions. IV: Extraction of borate from alkali and alkaline earth metal borates by isoamyl alcohol. E. Svarga and A. Levins. Latvian SSR Academy of Sciences, No. 9, 135-40 (in Russian) (Latvian summary); cf. C.A. 50, 9918a. --Aq. borate solns. (500 ml.) were shaken with 50 ml. isoamyl alc. and the distribution of H_2BO_3 between the solvents was detd. In 0.02M soln. hydrolysis of $NaBO_2$ was negligible, but $Na_2B_4O_7$ and NaB_5O_{10} decompd. almost fully to BO_2 . In $NH_4B_5O_{10}$, the anion hydrolyzed almost fully to BO_2 . $MgB_5O_{10} \cdot 7.5H_2O$ was relatively stable; and hydrolyzed only at concns. below 0.002M. The corresponding Ca salt was less stable and hydrolyzed partially in 0.006M soln. $MgB_5O_{10} \cdot 15H_2O$ hydrolyzed fully to form diborate and H_2BO_3 . $MgB_5O_{10} \cdot 3H_2O$ hydrolyzed only partially, with formation of $Mg(OH)_2$ and free H_2BO_3 . The corresponding Ca salts hydrolyzed more. A. Dravnieks

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74E20

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SVARCA, E

27
Sodium strontium pentaborate, E. Svarca and A. Dravnieks

Latvian PSR Zinatņu Akad. Vēstis 1956, No. 11, 161-5 (in Russian) (Latvian summary).— $\text{SrCl}_2 \cdot 6\text{H}_2\text{O}$ (0.01 mol.) in 20 ml. H_2O mixed with soln. of 0.015 mol. $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ and 0.005 mol. NaOH in 180 ml. H_2O and left for one week, gave needles of $\text{NaSrB}_4\text{O}_{10} \cdot 8\text{H}_2\text{O}$ (I), d_n 2.06, soly. 7.4 g. per 1 H_2O at 20°. On standing in H_2O for weeks, it formed $\text{Sr}_3\text{B}_4\text{O}_{10} \cdot 6\text{H}_2\text{O}$. In 3% H_2RO_4 soln., I transformed to $\text{SrB}_4\text{O}_{10} \cdot 6\text{H}_2\text{O}$. On heating, I lost 1 mol. H_2O at 64°, more H_2O at 64-120°. $\text{NaSrB}_4\text{O}_{10} \cdot 2\text{H}_2\text{O}$ appeared stable 120-160°, lost 1 H_2O at 160-190°. The last H_2O was lost at 260-320°, final d_n 2.33 (2.61 after heating to 800°). A differential thermal analysis curve is given. A. Dravnieks

Chem

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institute.

COUNTRY : USSR.
JOURNAL : Zoological Parasitology. Acarids and Insects G
as Disease Vectors. Insects.
ABST. JOUR. : Zhurnal., No. 14, 1958, No. 62679.
AUTHOR : Shvarta, Ye. A.,
INSTIT. : Central-Asian Scientific-Research Anti-Plague
TITLE : Concerning Two Flea Species from Kirghizia.
ORIG. PUB. : Tr. Sredne-Aziatsk. n.-i. protivochumn. in-ta.
1956, vyp. 2, 155-158.
ABSTRACT : A detailed morphological description and draw-
ings of new flea species: Frontopsylla (Fronto-
psylla s. str.) tjanshanica Schwarz., 1953,
and Paradoxopsyllus alatu Schwarz., 1953.

CARD: 1/1

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SHVARTS, Ye.M.; IYEVIN'SH, A.F.

State of borates of the double-salt type in aqueous solutions.
Zhur.neorg.khim. 2 no.2:439-443 F '57. (MLRA 10:5)

1.Institut khimii Akademii nauk Latvyskoy SSR.
(Borates)

SHVARTS, Y_o.M.; IYEVIN'SH, A.F. [Jevins, A.F.].

Borotartrates of alkaline earth metals. Part 2: Ammonium strontium borotartrate. Zhur. neorg. khim. 2 no.8:1757-1760 Ag '57.

(MIRA 11:3)

1. Institut khimii AN Latvyskoy SSR.
(Ammonium strontinum borotartrate)

443

AUTHORS: Shvarts, YE. M., and Vimba, S. G.

TITLE: The State of Borates in an Aqueous Solution (K voprosu o sostoyanii boratov v vodnom rastvore).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 23-29 (U.S.S.R.)

ABSTRACT: Systematic measurements were made to determine the coefficient, i , and molecular electric conductivity, μ , of aqueous borate solutions. The depression of the freezing point was determined by the known Beckmann method and the molar electro-conductivity by the Kohl-rausch method. The molar electro-conductivity at infinite solution was computed by extrapolation and from this, the ion conductivity of the borate-anion was computed. The stable ion of alkali metal borates in an aqueous solution is the monoborate-ion which by the addition of boric acid can change into a polyborate ion, obviously into a pentaborate-ion. The hexaborate ion is the stable ion in alkali-earth-metal borates in a 3% H_3BO_3 solution. The condition of borates in an aqueous solution may vary depending upon the borate concentration and the absence or presence in the solution of additives, especially boric acid. The state of borates in an aqueous solution depends also upon the cation, more accurately upon the energy of the base formed by the given cation.

Card 1/2

5(2) PHEASE I BOOK EXPLOITATION 30V/1916

Vesoyunoye sovetskoye po khimii bora, 1955

Bor, trudy Konferentsii po khimii bora i yego soyedineniyam (Boron: Transactions of the Conference on the Chemistry of Boron and Its Compounds) Moscow, Goskhimizdat, 1958. 189 p. Errata slip inserted. 2,400 copies printed.

Ed.: G.P. Lashinsky; Tech. Ed.: M.S. Lar'ya.

PREFACE: This book is intended for chemists, as well as for industrial personnel working with boron and its compounds.

CONTENTS: This collection contains 23 studies on the chemistry, crystalline structure, physicochemical properties, and technology of boron and its compounds. Twenty-two of the studies were presented at the All-Union Conference on Boron Chemistry, held in the Nauchno-Issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Research Physicochemical Institute im. L. Ya. Karpov) in

December 1955. Two of these articles deal with the thermochemistry of boron. The two studies on "boronum" production are being published for the first time. The studies are well illustrated and accompanied by bibliographies.

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Boraz; Transactions of the Conference (Cont.)	30V/1916
Fein, A.M., Ye. M. Pilyavskaya, G.B. Imov, M.I. Bulina, and L.I. Pilyavskaya. Boric Acid Production by the Reaction of Iodine with Borates With Structures of Nitric and Sulfuric Acids	135
Reshetnev, V.P. Processing of Borates at the Artyubinsk Chemical Kombinat	141
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SHWARTS, F.

GENERAL

PERIODICALS: **VESTIS** No. 1, 1958

SHWARTS, F. Eleventh conference on spectroscopy. In Russian, n. 166.

Monthly list of East European Accessions (MEAT) IC, Vol. 3, No. 2,
February 1958, Unclass.

SVARCE, E.

GENERAL

PERIODICALS: VESTIS No. 2, 1958

SVARCE, E. Synthesis of 3-bromo-8-mercaptoquinoline (3-bromothioxine).
In Russina. p. 115.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 2,
February 1959, Unclass.

582

AUTHORS: Shvarts, E.M. and Ievin'sh, A.F.

TITLE: State of Double-Salt Type Borates in Aqueous Solution. (Sostoyanie Boratov Tipa Dvoynykh Soley v Vodnom Rastvore).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry, Vol.11, No.2, pp.439-443. (U.S.S.R.)).

ABSTRACT: In this investigation determinations of electrical conductivity of borate solutions were made and boric acid was extracted from such solutions by isoamylalcohol. It was found from the results that various borates with two different cations, one of which is an alkali metal ion and the other an alkaline earth metal ion, are double-salt type compounds. In aqueous solution these borates decompose into monoborates and free boric acid. The boric acid thus liberated prevents further hydrolysis of the alkaline-earth metal monoborates.

There are 12 references of which 10 are Russian.

There are seven Tables.

The work was carried out at the Chemistry Institute of the Academy of Sciences of the Latvian SSR.

Received 28 September, 1956.

Card 1/1

SVARCE, E.

GENERAL

PERIODICALS: VESTIS, No. 3, 1958

SVARCE, E. Analytic application of 8-mercaptoquinoline (Thioixine) and its derivatives. VI. Vanadium complex of thioixine and its properties. Colorimetric determination of vanadium. In Russian. p. 121

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 2.
February 1959, Unclass.

841111

AUTHORS: Shvarts, Ye. I., Iyevin'sh, A. F. 71-3-5-12/39

TITLE: Borotartrate of Alkaline Metals (Borotartraty shchelochnozemel'nykh metallov)
 III. Boroditartrate of Ammonium-Calcium and Ammonium-Strontium (Boroditartraty ammoniya-kal'tsiya i ammoniya-strontsiya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1177 - 1180 (USSR)

ABSTRACT: The production conditions for the boroditartrates of ammonium-calcium and ammonium-strontium were investigated:
 $2(\text{NH}_4)_2\text{O} \cdot 0.3\text{CaO} \cdot \text{B}_2\text{O}_3 \cdot 4 \text{C}_4\text{H}_4\text{O}_5 \cdot 10 \text{H}_2\text{O}$ and
 $2(\text{NH}_4)_2\text{O} \cdot 0.3\text{SrO} \cdot \text{B}_2\text{O}_3 \cdot 4 \text{C}_4\text{H}_4\text{O}_5 \cdot 10 \text{H}_2\text{O}$.
 The crystallization velocity of the salts depends on the p_H -value of the solution and on the ratio between tartaric acid and boric acid in the reaction mixture. The method of production of boroditartrate of ammonium-strontium is more difficult. It can be produced at a p_H -value of 8 and

Card 1/3

7-5-5-19/39

Borotartrate of Alkaline Metals. III. Boroditartrate of Ammonium-Calcium and Ammonium-Strontium

at a ratio between tartaric acid and boric acid of 4:1. Some properties were determined from the produced compounds: solubility in water, specific weight. Also, the dehydration and the separation of ammonia were determined by means of thermographic analysis. The solubility of boroditartrate of ammonium-calcium amounts to 1.77 g/l at 15-16°C, that of boroditartrate of ammonium-strontium to 1.83 g/l at 19-20°C. The specific weight of boroditartrate of ammonium-calcium amounts to 1.55 g/cm³ at 25°C, that of boroditartrate of ammonium-strontium, 1.25 g/cm³. The dehydration and the separation of ammonia was determined at temperatures of 50, 60, 120, 130, 250 and 300°C. Ammonia is already separated at 100-120°C, and at 250-260°C a complete separation of ammonia occurs. The thermograms of boroditartrate of ammonium-calcium show two different endothermal effects at 50-113°C and at 136-249°C. In the thermograms of boroditartrate of ammonium-strontium, endothermal effects first occur between 43

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76-3-5-12/32

Borotartarate of Alkaline Metals. III. Derivatives of Ammonium-Calcium and Ammonium-Strontium

and 235°C, which correspond to the dehydration and to the separation of NH_3 . There are 5 figures, and 3 references, 2 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latvyskoy SSR (Institute of Chemistry, AS Latvian SSR)

SUBMITTED: May 21, 1957

AVAILABLE: Library of Congress

1. Alkaline metals-- Borotartarate--Production 2. Ammonium-calcium--Derivatives 3. Ammonium-strontium--Derivatives

Card 3/3

SHVARTS Ye. M.

SVARCA, E. : ~~LEVIN, A.~~

GENERAL

PERIODICALS: VESTIS, NO. 8, 1958

SVARCA, E. ; ~~LEVIN, A.~~ Boroditartrates of lithium and sodium.
In Russian. p.99.

Monthly list of East European Accessions (EEAI) LC, VOL. 8, No. 2
February 1959, Unclass.

SOV/78-4-1-17/48

5(2)
AUTHORS:

Shvarts, Ye. M., Ievins, A. F.

TITLE:

IV. Boron Ditartrates of Calcium and Barium (IV. Boroditartraty kal'tsiya i bariya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 82-84 (USSR)

ABSTRACT:

The synthesis of barium and calcium boron ditartrate was described. The precipitates obtained at pH 8 are of the following compositions: $5\text{CaO} \cdot \text{B}_2\text{O}_3 \cdot 4\text{C}_4\text{H}_4\text{O}_5 \cdot 16\text{H}_2\text{O}$ and $5\text{BaO} \cdot \text{B}_2\text{O}_3 \cdot 4\text{C}_4\text{H}_4\text{O}_5 \cdot 10\text{H}_2\text{O}$. The specific gravity of calcium-boron ditartrate was pyknometrically measured in toluene at 25° . The specific gravity of calcium-boron ditartrate is 1.62 g/cm^3 , and of barium-boron ditartrate 2.21 g/cm^3 . The solubility of calcium-boron ditartrate at 25° is $2.46 \text{ g/l H}_2\text{O}$, and of barium-boron ditartrate $0.7 \text{ g/l H}_2\text{O}$. The dehydration curves of the preparations (up to constant weight) were determined for temperatures of 60, 80, 100, 150, 180, 220, 250, and 280° . At temperatures higher than 280° decomposition of the compounds takes place. The thermo-

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SOV/78-4-1-17/48

IV. Boron Ditartrates of Calcium and Barium

gram of calcium-boron ditartrate shows an endothermic effect at $40-291^{\circ}$ which indicates dehydration. At $366-517^{\circ}$ a strong exothermic effect occurs indicating the decomposition of the tartrates. The exothermic effect at $577-579^{\circ}$ is not clear. The thermogram of barium-boron ditartrate shows two endothermic effects at $40-164^{\circ}$ and $164-236^{\circ}$ indicating dehydration. At $328-454^{\circ}$ an exothermic effect occurs which indicates the decomposition of tartrate. The endothermic effect at $576-658^{\circ}$ is not clear. There are 3 figures and 3 references, 1 of which is Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latvyskoy SSR (Institute of Chemistry of the Academy of Sciences, Latvian SSR)

SUBMITTED: July 11, 1957

Card 2/2

SOV/78-4-1-18/48

5(2)
 AUTHORS: Shvarts, Ye. M., Ievins[✓] A. F., Zil'ber, M. L.

TITLE: Ammonium-cadmium Boron Tartrate (Borotartrat ammoniya-kadmiya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 85-87 (USSR)

ABSTRACT: The synthesis of ammonium-cadmium boron tartrate obtained by mixing solutions of cadmium nitrate, tartaric acid and boric acid in the molar ratio of 1:1:1, 1:2:1, 1:1:2, 1:3:1, 1:4:1 is described. With tartaric acid and boric acid being in the ratio of 1:1 and 1:2 and ammonium chloride being present in the solution, the compound $\text{Cd}(\text{NH}_3)_2\text{Cl}_2$ was separated out at pH 8 in the form of large crystals. In the remaining ratios ammonium-cadmium boron tartrate is formed in the form of long needles: $2(\text{NH}_4)_2\text{O} \cdot \text{CdO} \cdot \text{B}_2\text{O}_3 \cdot 2\text{C}_4\text{H}_4\text{O}_5 \cdot 5\text{H}_2\text{O}$. Several properties of this compound were investigated. The solubility of this compound in water is 13.96 g/l at 25°. The specific gravity is 1.95 g/cm³ at 25°. The dehydration and the ammonia separation were investigated at 50, 80, 100, 120, 150, 180, 200 and 250°. At 250° the compound decomposes. The thermogram of ammonium-cadmium

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SOV/78-4-1-19/48

Ammonium-cadmium Boron Tartrate

boron tartrate was drawn. The thermal curve is characterized by an endothermic effect at $63-226^{\circ}$, an endothermic effect at 261° , and an exothermic effect at 611°C . There are 3 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latvyskoy SSR (Institute of Chemistry of the Academy of Sciences, Latvian SSR)

SUBMITTED: October 7, 1957

Card 2/2

5(2)

AUTHORS:

SOV/78-4-8-21/43
Shvarts, Ye. M., Iyevin'sh, A. F. (Ievin's, A.F.)

TITLE:

On the Complex Character of the Ions of Borotartrates in Aqueous Solution (O kompleksnom kharaktere ionov borotartratov v vodnom rastvore)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1835-1838 (USSR)

ABSTRACT:

The authors synthesized the following crystallizing borotartrates: $K_2O \cdot 2SrO \cdot B_2O_3 \cdot 2C_4H_4O_5 \cdot 10H_2O$; $(NH_4)_2O \cdot 2SrO \cdot B_2O_3 \cdot 2C_4H_4O_5 \cdot 10H_2O$; $K_2O \cdot 2CdO \cdot B_2O_3 \cdot 2C_4H_4O_5 \cdot 6H_2O$; $2K_2O \cdot CdO \cdot B_2O_3 \cdot 2C_4H_4O_5 \cdot 2H_2O$; $2(NH_4)_2O \cdot CdO \cdot B_2O_3 \cdot 2C_4H_4O_5 \cdot 5H_2O$ and the boroditartarates $2(NH_4)_2O \cdot 3SrO \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 10H_2O$; $2(NH_4)_2O \cdot 3CaO \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 10H_2O$; $5CaO \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 16H_2O$; $5BaO \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 10H_2O$; $5Na_2O \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 12H_2O$ and $5Li_2O \cdot B_2O_3 \cdot 4C_4H_4O_5 \cdot 6H_2O$. Some of these compounds contain two different metals. The problem was whether the metal or the boron forms the complex anion with tartaric acid. The aqueous solution of the compound was

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SOV/78-4-8-21/43

On the Complex Character of the Ions of Borotartrates in Aqueous Solution

cryoscopically investigated, moreover, the specific and molar conductivity was measured and the mobility and the conductivity of the anion were computed (Tables 1-6). The following was found: boric acid forms the complex anions $[\text{BO}_2 \cdot \text{C}_4\text{H}_4\text{O}_6]^{5-}$ and $[\text{BO}_2 \cdot 2\text{C}_4\text{H}_4\text{O}_6]^{5-}$ with tartrates. The complex anions of the borotartrates are stable only in concentrated solution. When diluted they decompose according to the scheme:

$[\text{BO}_2 \cdot 2\text{C}_4\text{H}_4\text{O}_6]^{5-} \rightleftharpoons [\text{BO}_2 \cdot \text{C}_4\text{H}_4\text{O}_6]^{3-} + \text{C}_4\text{H}_4\text{O}_6^{2-}$. The monotartrate complexes are more stable. There are 2 figures, 6 tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latvyskoy SSR (Chemical Institute of the Academy of Sciences of the Latvian SSR)

SUBMITTED: April 24, 1958

Card 2/2

5(2)

AUTHORS:

Bankovskiy, Yu. A., Shvarts, Ye. M.,
Ievins, A. F.

SOV/75-14-3-10/29

TITLE:

Analytical Application of 8-Mercapto Quinoline
(Thiooxine) and Its Derivatives (Analiticheskoye primeneniye
8-merkaptokhinolina - tioksina - i yego proizvodnykh).
Communication 5. Photometric Determination of Molybdenum
(Soobshcheniye 5. Fotometricheskoye opredeleniye molibdena)

PERIODICAL:

Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3,
pp 313-317 (USSR)

ABSTRACT:

Thiooxine reacts both in weakly and strongly acid solution
with molybdates under formation of compounds insoluble in
water. Under certain conditions the green $\text{MoO}_2(\text{C}_9\text{H}_6\text{NS})_2 \cdot \text{H}_2\text{O}$
is formed which dissolves in organic solvents with emerald
coloration. In the presence of ascorbic acid a pronounced
adsorption maximum is formed at 420 mμ. The molar extinction
coefficient is 8,600. Figure 3 shows that the toluene extract
of the molybdenum thiooxinate obeys Beer's law. An excess of
Fe, Co, Ni, Zn, Cd, Pb, Mn, U, Tl, Ir and Rh does not
influence the determination. Bi, Ag, Au, Hg and W form

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Analytical Application of 8-Mercapto Quinoline
(Thiooxine) and Its Derivatives. Communication 5.
Photometric Determination of Molybdenum

SOV/75-14-3-10/29

voluminous amorphous precipitates which are insoluble in toluene and xylene and must therefore be masked like Os, Ru, Cu, Pt and Pd what is done with thiourea. The determination of molybdenum according to this method is possible up to a molybdenum content of 1.5 - 200%. There are 3 figures, 2 tables, and 11 references, 2 of which are Soviet.

ASSOCIATION: Institut khimii AN Latviyskoy SSR, Riga (Institute of Chemistry of the Academy of Sciences of the Latvian SSR, Riga)

SUBMITTED: May 19, 1957

Card 2/2

IEVIN'SH, A. [Ievins, A.] (Riga); ZIL'BER, M. [Zilbers, M.] (Riga);
SHVARTS, E. [Svarce, E.] (Riga)

* Borotatrate of zinc. In Russian. Vestis Latv ak no. 4:105-108
'60. (KRAI 10:7)

1. Akademiya nauk Latvyskoy SSR, Institut khimii.
(Zinc) (Borotatrates)

SHVARTS, Ye.M.; IYEVIN'SH, A.F.

Hexaborate of divalent iron. Zhur. neorg. khim. 5 no.8:1676-1677
Ag '60. (MIRA 13:9)

1. Institut khimii Akademii nauk Latvinskoy SSR.
(Iron borate)

SHVARTS, Ye.[Svarca, E.](Riga); IYEVIN'SH, A.[Ievins, A.](Riga); ZIL'BER, M.
[Zilbere, M.](Riga)

Boron tartrates of ammonium-zinc. Vestis Latv ak no.10:87-90 '60.
(EEAI 10:9:10)

1. Akademiya nauk Latvyskoy SSR, Institut khimii.

(Tartrates) (Ammonium compounds) (Zinc oxide)

S/197/61/000/004/002/004
B101/B229

AUTHORS: Shvarts, Ye., Iyevin'sh, A.
TITLE: Obtaining of boric acid from diluted solutions in the form of boron tartraten
PERIODICAL: Izvestiya Akademii nauk Latvyskoy SSR, no. 4, 1961, 67-71

TEXT: The purpose of the present paper was to obtain boric acid from natural waters and industrial waste waters where it is mostly found in concentrations from 10^{-4} to 0.5%. The precipitation of boric acid resulted in barium boro-ditartrate. The precipitation of the boric acid was examined by means of various reagents: As initial solution of the boric acid served a solution containing 0.05% B from which 0.01, 0.005, and 0.001% solutions were produced by dilution. The ratio reagent : B was 2,3,4,6,8, or 16. The pH was between 8 and 9. The precipitation required a few days. Then filtration commenced. In the condensation the boron was determined volumetrically, in the filtrate colorimetrically, by means of quinalizarin. The reagent used first: 7 g tartaric acid, 6.5 g $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$, 50 g NH_4Cl .

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S/197/61/000/004/002/004
B101/B229

Obtaining of boric acid from ...

500 ml H₂O, and 50 ml concentrated NH₄OH, was sufficiently effective only in great surplus. As a result of the reaction equation $5 \text{BaCl}_2 + 2\text{H}_3\text{BO}_3 + 4\text{C}_4\text{H}_6\text{O}_6 \rightarrow 5\text{BaO} \cdot \text{B}_2\text{O}_3 \cdot 4\text{C}_4\text{H}_4\text{O}_5 + 10 \text{HCl}$: 7 g tartaric acid, 21 g BaCl₂·H₂O, 50 g NH₄Cl, 500 ml H₂O, 50 ml concentrated NH₄OH was calculated as optimum reagent. With this reagent, the following results were obtained (Table 2):

Ratio reagent : B	2 : 1	3 : 1	4 : 1	6 : 1	8 : 1
Concentration of B, %	% precipitated B				
0.05	71.4	100	100	100	96.2
0.01	67	100	100	100	100
0.005	60	94	100	100	96
0.001	0	0	0	0	0
0.05% B+10% MgCl ₂ ·6H ₂ O	-	62.8	-	-	-
0.01% B+10% MgCl ₂ ·6H ₂ O	-	0	-	-	-
0.005% B+10% MgCl ₂ ·6H ₂ O	-	0	-	-	-

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Obtaining of boric acid from ...

S/197/61/000/004/002/004
B101/B229

Since natural waters mostly contain NaCl and CaCl_2 , it was tried to replace in the reagent the NH_4Cl by NaCl, the NH_4OH by NaOH, and the BaCl_2 by CaCl_2 . As shown in Fig.5, the precipitation by means of the Na-Ca-tartrate reagent was less complete, as Ca boroditartrate has a higher solubility than barium salt. From Table 4 it results that the reagent 7 g tartaric acid, 21 g $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$, 50 g NaCl, 500 ml H_2O , and addition of NaOH until pH = 8.8 was reached, was likewise useful:

Concentration of B, %	Ratio reagent : B	2:1	3:1	4:1
0.05	% precipitated B	81.2	100	100
0.01		72	100	100
0.005		32	100	100
0.001		0	0	0

The precipitation was disturbed by magnesium chloride in all tests. There are 6 figures, 5 tables, and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc.

Card 3/4

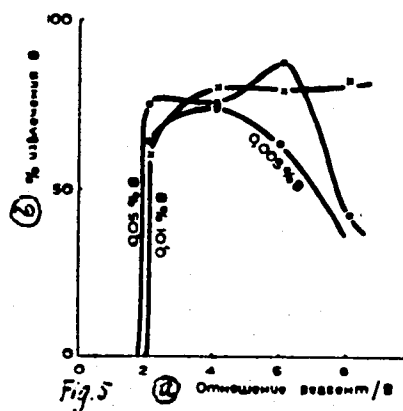
Obtaining of boric acid from ...

S/197/61/000/004/002/004
B101/B229

ASSOCIATION: Institut khimii AN Latv. SSR (Institute of Chemistry, AS
Latviyskaya SSR)

SUBMITTED: November 9, 1960

Fig.5. Precipitation of boron by means
of Na-Ca-tartrate reagent. Legend:
(a) ratio reagent : B,
(b) % precipitated boron



Card 4/4

SHVARTS, Ye.M.; TOMILOVA, M.Ye.; IYEVIN'SH, A.F. [Ievins, A.]

Borotrihydroxy glutarates of elements of group II of the periodic
table. Zhur. neorg. khim. 10 no.9:2084-2089 S '65. (MIRA 18:10)

DAVIDENKO, P.A.; BARANOV, K.G.; SHVARTS, Ye.Ya.

Finishing parts with heated nitro lacquer. Der. prem. 6 no.5:17-19
My '57. (MIRA 10:6)

1. Moskovskiy derevoobrabatyvayushchiy zavod Glavchasproma Minister-
stva priborostroyeniya i sredstv avtomatizatsii SSSR.
(Woodworking industries) (Lacquers and lacquering)

DAVIDENKO, P.A.; SHVARTS, Ye.Ya.; BARANOV, K.G.

Decorative elements from sawdust. Der.prom. 6 no.8:22-23 Ag '57.
(MIRA 10:11)

1. Derevoobrabatyvayushchiy zavod Glavchasroma.
(Wood, Compressed) (Clocks and watches)

SHVARTS, Ye. Ye.
DAVIDENKO, P.A.; SHVARTS, Ye. Ye.

Finishing of wood objects used in tropical conditions. Der. prom. 7
no.2:19-20 P '58. (MIRA 11:1)

(Wood finishing) (Tropics)

DAVIDENKO, P.A.; SHVARTS, Ye.Ya.

Automatic temperature control in unit for centralized varnish
feed. Der. prom. 8 no.5:20 My '59.

(MIRA 12:7)

(Varnish and varnishing)

DAVIDENKO, P.A.; SHVARTS, Ye.Ya.

Milling machines with hard alloy blades made from powder metal
blanks. Der. prom. 8 no.11:25-26 N '59. (MIRA 13:3)
(Woodworking machinery)

IVANOV, Nikolay Alekseyevich; SHVARTS, Yefim Yakovlevich; SHEYDIN,
I., red.

[Wood finishing with polyvinyl chloride films] Otdelka drev-
vesiny plenkami PVKh. Leningrad, 1963. 26 p. (Leningradskiy
dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom
Seriya: Primenenie plastmass, sinteticheskikh kauchukov i
kremniorganicheskikh soedinenii v mashinostroenii i priboro-
stroenii, no.5) (MIRA 17:7)

SHVARTS, Ye. Yu.; GINZBURG, O. F.; and SOROVA, A. D.

Interaction of the Ethers of Carbinol Bases of Triphenylmethane Dyes with Organic Magnesium Compounds, page 1100, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

Laboratory of the Technology of Organic Dyestuffs imeni A. Ye. Poray-Koshits, Leningrad Technological Inst imeni Lensovet

SNVARTS, E. Yu.
CZECH

✓ Reaction of ethers of carbinol bases of triphenylmethane dyes with organomagnesium compounds. O. F. Ginzburg, A. S. Sopova, and E. Yu. Snvarts (Lensovet Technol. Inst., Leningrad). *Vysokomol. Soedin. Khim.* 2, 1100-2 (1953).—Treatment of Me ether of crystal violet carbinol base with MeMgI (25% excess) gave crystal violet HI salt; similarly Me ether of malachite green carbinol base and MeMgI gave malachite green HI salt; Me ether of crystal violet carbinol base with EtMgBr gave crystal violet HBr salt, while Me ether of malachite green carbinol base and EtMgBr gave malachite green HBr salt. The reactions were run 16 hrs. at room temp., after which the mixts. were quenched in H₂O and AcOH added. To boiling soln. of 2 g. crystal violet carbinol base Me ether in Et₂O-C₆H₆ was slowly added 50 ml. of Et₂O soln. of MeMgI from 3.54 g. MeI; the addn. made over 4.5 hrs., followed by heating 12 hrs. gave after eq. treatment 0.81 g. (*p*-Me₂NC₆H₄)₂CMe, m. 209-10° (from MeOH). Similarly PhCH₂MgCl gave (*p*-Me₂NC₆H₄)₂CCH₂Ph, m. 180-1°; malachite green carbinol base Me ether and MeMgI similarly gave (*p*-Me₂NC₆H₄)₂CPhMe, m. 134° (from MeOH), and (*p*-Me₂NC₆H₄)₂CPhCH₂Ph, m. 119° (from MeOH).
G. M. Kosolapoff

SHVARTS, YE. Yu.

Arresting telomerization of isoprene and prenyl chloride.
Sh. V. Bal'ran, A. A. Petrov, Yu. I. Kheruze, and E. Yu.
Shvarts. U.S.S.R. 106,808, Aug. 25, 1957. When the title
reaction triggered by $ZnCl_2$ has gone far enough and the de-
sired length of telomer chain is attained, the reaction is
arrested by addn. of NH_4OH or an org. base such as pyri-
dine or diethylamine. M. Hosh

74ESd
4E4
4E2C(7)
2-MAY
NS MB

307/79-28-6-4/63

AUTHORS: Petrov, A. A., Bal'yan, Kh. V., Kheruze, Yu. I.,
Shvarts, Ye. Yu., Cherenkova, L. L.

TITLE: Investigations in the Field of Combined Systems (Issledo-
vaniya v oblasti sopryazhennykh sistem) LXXXIX. The Influence
of Various Factors on the Yield of Geranyl Chloride in the
Reaction of Isoprene With Its Hydrochlorides (LXXXIX. Vliyaniye
razlichnykh faktorov na vykhod geranilkhlorida v reaktsii
isoprena s yego gidrokhloridami)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1435 - 1444
(USSR)

ABSTRACT: In many investigations of synthesizing geranyl chloride in
a good yield special attention was paid to the binding of
the 1 chloro-3-methylbutene-2 to isoprene. Its production
offered good prospects to the perfume- and vitamin industry.
This was the reason for many laboratories, such as the
author's, to investigate the reaction of the diene hydrocarbons
with their hydrochlorides in order to learn on which condi-
tions the best yields of geranyl chloride and its derivatives

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30V/79-28-6-4/63

Investigations in the Field of Combined Systems. LXXXIX. The Influence of Various Factors on the Yield of Geranyl Chloride in the Reaction of Isoprene With Its Hydrochlorides

could be realized. The final product of the binding of isoprene hydrochlorides to isoprene is a complex mixture of halogen derivatives of the formula $C_5H_9 \cdots (C_5H_8)_n \cdots Cl$. In this paper only the fraction of terpene chlorides of the composition $C_{13}H_{21}Cl(n=1)$ was investigated. The telomerization reaction of isoprene with its hydrochlorides was investigated in the presence of various catalysts of which tin chloride and zinc chloride proved to be the best. It was found that the character of the telomerization depends on the nature of the catalyst: tin chloride promotes the formation of the higher telomers besides geranyl chloride, tin chloride that of terpenyl chloride. It was shown that in using tin chloride and zinc chloride catalysts the yield of geranyl chloride depends first of all on the depth of the conversion, and that with the same depth of conversion secured it does not depend on the nature of the catalyst, the nature of the halogen derivatives, the temperature, the ratio of reagents, and only little on the nature of the solvent. The composition of the mixture of terpene chlorides forming in the telo-

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Investigations in the Field of Combined Systems. LXXXIX. The Influence of Various Factors on the Yield of Geranyl Chloride in the Reaction of Isoprene With Its Hydrochlorides

30V/79-28-6-4/63

merization can be determined according to the frequency intensities of the infrared spectrum within the range of 1.6 and of from 10 .. 12 μ . There are 3 figures, 4 tables, and 11 references, 10 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensovet
(Leningrad Technological Institute imeni Lensovet)

SUBMITTED: May 24, 1957

1. Chlorodimethyloctadine--Synthesis 2. Isoprene--Chemical reactions

Card 3/3

SOV/79-29-2-20/71

AUTHORS: Petrov, A. A., Balyan, Kh. V., Kheruze, Yu. I., Shvarts, Ye. Yu., Yakovleva, T. V.

TITLE: On the Question of the Structure of Citral, Obtained From the Synthetic Geranyl Chloride (K voprosu o stroenii tsitralya, poluchennogo iz sinteticheskogo geranilkhlorida)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 445-450 (USSR)

ABSTRACT: In connection with the systematic investigations begun in their laboratories in the field of telomerization of diene hydrocarbons with halogen derivatives (Refs 1-3), K. V. Leets, A. K. Shumeyko and collaborators achieved the synthesis of citral from isoprene (Ref 4). The question arose obviously, whether this citral differs from natural samples and especially from citral, commercially obtained from coriander oil. According to data contained in publications (Refs 5-7) natural citral chiefly consists of citral «a», geranial, whereas in synthetic citral neral (citral «b» is predominant). By the aid of the infrared spectra of citral isomers separated from one another by some research workers (Refs 6-8), the structure of citral from isoprene is conveniently determinable, all the more as it became

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SOV/79-29-2-20/71

On the Question of the Structure of Citral, Obtained From the Synthetic Geranyl Chloride

possible also to solve the question of the content of the α and β form simultaneously (Ref 9). Thus, investigations were extended to the infrared and ultraviolet spectra, as well as the Raman spectrum of synthetic citral, obtained from the telomers of isoprene with its hydrochlorides according to Somme. The citral samples obtained from both isomeric hydrochlorides of isoprene, were found to be practically identical. Synthetic citral differs somewhat from natural and technical citral, differences being caused by the different content of geometrical isomers (geranial and neral) and by the presence of an admixture. Synthetic citral was found to have but a small amount of α -form. There are 2 figures, 4 tables, and 14 references, 8 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensovet
Leningrad Technological Institute imeni Lensovet)

SUBMITTED: December 31, 1957
Card 2/2

5(3)
 AUTHORS: Petrov, A. A., Bal'yan, Kh. V., Kheruze, Yu. I., Shvarts, Ie. Ia., Cherenkova, L. L. SOV/79-29-6-21/72

TITLE: Investigations in the Field of the Conjugated Systems (Issledovaniya v oblasti sopryazhennykh sistem). XCIX. On the Problem of the Synthesis of Geranyl Chloride by Telomerization of Isoprene With Its 1,4-Hydrochloride (XCIX. K voprosu o sinteze geranil-khlorda telomerizatsiyey izoprena i yego 1,4-gidrokhlorigom)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1876 - 1878 (USSR)

ABSTRACT: In a report recently published (Ref 1) the authors described the synthesis of geranyl chloride by means of telomerization of isoprene with its hydrochloride in the presence of stannic or stannous chloride as catalysts. In the paper under review the results of further investigations on this reaction were presented, in which, however, different catalysts were used. The effect of titanium tetrachloride on the mixture of isoprene and its 1,4-hydrochloride (1-chloro-3-methyl butene-2), on the mixtures of $TiCl_4$ and $SnCl_4$, $SnCl_4$ and excess HCl , $SnCl_4$ and

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Investigations in the Field of the Conjugated Systems. SOV/79-29-6-21/72
XCIX. On the Problem of the Synthesis of Geranyl Chloride by Telomerization
of Isoprene With Its 1,4-Hydrochloride

CuCl_2 , FeCl_3 and potassium bifluoride, $\text{Zn}(\text{BF}_4)_2$ and BiBr_3
was investigated. The investigations with these catalysts led
to the conclusion that on telomerization of isoprene with its
hydrochloride two groups of catalysts have to be distinguished:
The catalysts of the first group (SnCl_4 , TiCl_4 , FeCl_3) yield
the highest telomers. The catalysts of the second group (ZnCl_2 ,
 $\text{Zn}(\text{BF}_4)_2$, BiBr_3) only lead to the stage of the formation of
terpene chlorides where the reaction stops. The cause of this
stop is, as has been already found previously, the partial
cyclization of the geranyl chloride into the terpenyl chloride.
Therefore the content of geranyl chloride in the terpene fraction
of the telomer is far less than when using catalysts of the first
group. The hydrogen chloride retards the telomerization but does
not affect its character. There are 1 table and 1 Soviet refer-
ence.

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Investigations in the Field of the Conjugated Systems. SOV/79-29-6-21/72
XCIX. On the Problem of the Synthesis of Geranyl Chloride by Telomerization
of Isoprene With Its 1,4-Hydrochloride

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensovet (Leningrad Technological Institute imeni Lensovet)

SUBMITTED: May 31, 1958

Card 3/3

86500

S/079/60/030/011/005/026

R001/B066

AUTHORS: Shvarts, Ye. Yu. and Petrov, A. A.

TITLE: Reactions of Chlorine-containing Telomers of Diene Hydrocarbons. V. Synthesis of Some Alcohols of the Sesquiterpene Series and Their Analogs

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 11, pp. 3598-3604

TEXT: In the present paper, terpene, sesquiterpene, and polyterpene chlorides were applied to the synthesis of nerolidol, farnesol, and their analogs and homologs according to the classical method by L. Ružicka. The study utilized the terpene chlorides obtained by telomerization of prenyl chloride with isoprene (geranyl chloride) and piperylene hydrochloride with isoprene and chloroprene (Ref. 15). Geranyl acetone resulted from geranyl chloride, and from the former, dehydronerolidol, nerolidol, and farnesol were obtained. Dehydronerolidol had to be freed from ketone impurities. This fact, which is confirmed only by spectroscopic investigation, indicates that the purity of many sesquiterpene alcohols described in

Card 1/3

86500

Reactions of Chlorine-containing Telomers of
Diene Hydrocarbons. V. Synthesis of Some
Alcohols of the Sesquiterpene Series and Their Analogs

S/079/60/030/011/005/026
B001/B066

publications is insufficient without checking their infrared spectra. In analogous manner, the isomers of dehydronerolidol and nerolidol were obtained from 1-chloro-3,5-dimethyl-octadiene-2,6, i.e., 3,7,9-trimethyl-dodecadien-6,10-in-1-ol-3 and 3,7,9-trimethyl-dodecatrien-1,6,10-ol-3. The analogs of the above-mentioned products with one chlorine atom instead of the methyl group, 7-chloro-3,9-dimethyl-dodecadien-6,10-in-1-ol-3 and 7-chloro-3,9-dimethyl-dodecatrien-1,6,10-ol-3 resulted from 1,3-dichloro-5-methyl-octadiene-2,6. These alcohols are colorless, oily liquids with pleasant odor, and distillable without decomposition. In the infrared spectra of the alcohols, a weak 2120 cm^{-1} band is assignable to the triple bond in the end position, and an intense 3290 cm^{-1} band to the stretching vibrations of the CH group. The valence frequencies of the double bond in the spectra of alcohols (without chlorine) show a weak intensity. The deformation vibrations of the CH group in the grouping $-\text{CH}=\text{CH}-$ show an intense frequency. In alcohols with a nerolidol grouping, intense deformation frequencies (995 and 920 cm^{-1}) are indicative of a vinyl group. There are 1 figure, 4 tables, and 23 references: 15 Soviet, 1 US, 4 Swiss,

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86500

Reactions of Chlorine-containing Telomers of S/079/60/030/011/005/026
Diene Hydrocarbons. V. Synthesis of Some B001/B066
Alcohols of the Sesquiterpene Series and Their Analogs

1 German, and 1 French.

ASSOCIATION: Leningradskiy tekhnologicheskij institut imeni Lensovet
(Leningrad Technological Institute imeni Lensovet) X

SUBMITTED: January 1, 1960

Card 3/3

SHVARTS, Ye.Yu.; PETROV, A.A.; BAL'YAN, Kh.V.

Some characteristics of the bromination of citric acid. Trudy
LTI no.60:78-84 '60. (MIRA 14:6)

1. Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo
instituta imeni Lenoveta.
(Citric acid) (Bromination)

159200

2209.1372, 1474

S/079/61/031/002/006/019
B118/B208

AUTHORS:

Shvarts, Ye. Yu. and Petrov, A. A.

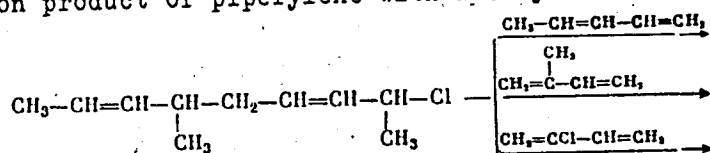
TITLE:

Studies in the field of conjugated systems. CXXXI. Synthesis of "sesquiterpene chlorides" by telomerization of piperylene, isoprene, and chloroprene with dipiperylene hydrochloride (2-chloro-6-methyl-nonadiene-3, 7), and their conversion to "sesquiterpene alcohols"

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 2, 1961, 433-440

TEXT: There are few data available on separation and conversion of sesquiterpene chlorides (Ref. 6). In the present paper, tripiperylene hydrochloride (I), dipiperylene isoprene hydrochloride (II), and dipiperylene chloroprene hydrochloride (III) were studied which result on telomerization of piperylene, isoprene, and chloroprene with dipiperylene hydrochloride (the primary telomerization product of piperylene with its hydrochloride) (Scheme 1)

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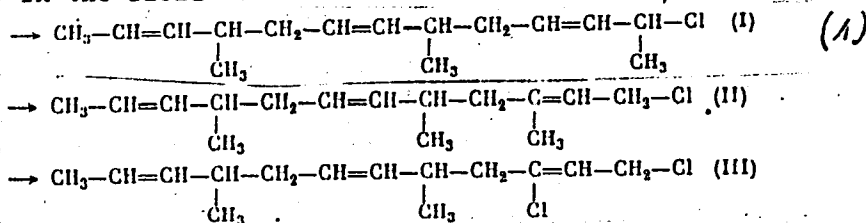


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B118/B208

Studies in the field ...



The separation of these chlorides from telomerization products of dienes with their hydrochlorides is not accomplished by direct vacuum distillation of the residue (due to decomposition) after distilling off the monomers and the "terpene fraction", but only by passing its solution in petroleum ether over a slightly absorbing silica gel; this residue is thus freed from unstable products, so that it may be distilled in vacuo to separate the "sesquiterpene fraction" without appreciable decomposition. An active silica gel leads to resinification of the telomers. The following "sesquiterpene chlorides" were separated in this way from the telomer mixture of divinyl, isoprene, and piperylene with piperylene hydrochloride: piperylene-di-divinyl hydrochloride (IV), piperylene diisoprene hydrochloride (V),

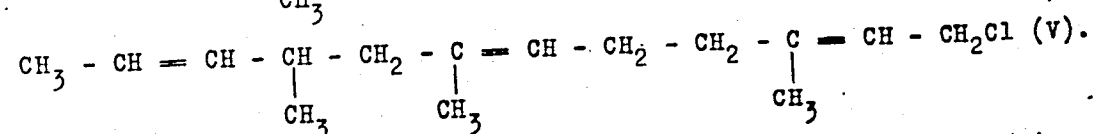
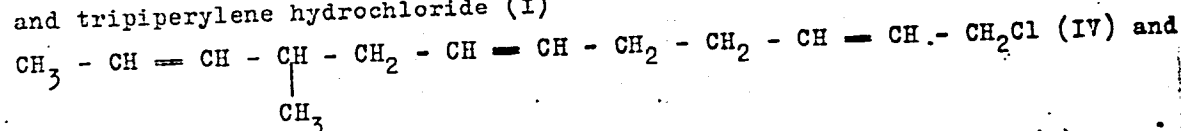
Card 2/4

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B118/B208

Studies in the field ...

and tripiperylene hydrochloride (I)



The structure assumed for the major part of the chlorides (I) - (V) was confirmed by their infrared spectra which show the same peculiarities as the spectra of the corresponding terpene chlorides whose structure was confirmed chemically. The quantity of primary chlorides was determined in all chlorides by the usual method (Ref. 13). The yield of product (I) was only 3-5%, of products (II) and (III) 70-80%, of (IV) and (V) 50-60%. The corresponding "sesquiterpene alcohols" were obtained from tripiperylene and dipiperylene isoprene hydrochlorides (Scheme 2).

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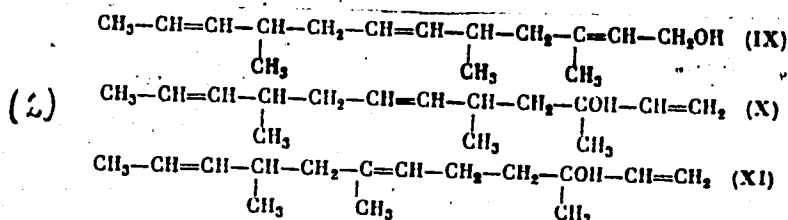
Studies in the field ...

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B118/B208

By hydrogenation of the "sesquiterpene alcohol" from piperylene, 6, 10-dimethyl tridecanol-2 resulted, and by oxidation of the latter, 6, 10-dimethyl tridecanone-2. There are 2 figures, 1 table, and 16 references: 15 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensovet
(Leningrad Technological Institute imeni Lensovet)

SUBMITTED: March 28, 1960



Card 4/4

SHVARTS, Ye.Yu.; PETROV, A.A.

Reaction of chlorine-containing telomers of dienic hydrocarbons. Part 10: Preparation of farnesol from ~~the~~ sesquiterpene fraction of isoprene telomers with its hydrochlorides. Zhur.ob.khim. 32 no.10:3278-3280 0 '62. (MIRA 15:11)

1. Leningradskiy tekhnologicheskii institut imeni Lensovetu.

(Farnesol)

(Sesquiterpenes)

DOLGOPLOSK, S.B.; CHEBYSHEVA, L.M.; KLEBANSKIY, A.L.; SHVARTS, Ye.Yu.;
FOMINA, L.P.

Some properties of rubbers made from siloxane polymers containing
arylene links in the principal chain. Kauch. i rez. 22 no.9:
1-2 S '63. (MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteti-
cheskogo kauchuka im. S.V. Lebedeva.

L 11291-63 EPR/EWP(j)/EPF(o)/EWT(m)/ES(s)-2/BDS--AFETC/ASD/SSD--
 Ps-l/Pc-l/Pr-l/Pt-l--RM/WW/MAY
 ACCESSION NR: AP3001404

S/0020/63/150/004/0813/0815

82

AUTHOR: Dolgoplosk, S. B.; Klebanskiy, A. L.; Fomina, L. P.; Fikhtengol'ts;
Shvarts, Ye. Yu.

TITLE: Siloxane polymers with phenylene groups in the backbone

SOURCE: AN SSSR. Doklady, v. 150, no. 4, 813-815, 1963

TOPIC TAGS: siloxane polymers, phenylene groups, tetramethyldisiloxane, 1-dimethylsilyl-4-dimethylsiloxyphenylene, elasticity, x-ray patterns, thermo-mechanical curves, glass transition temperature

ABSTRACT: Research has been undertaken with the object of improving the heat resistance and resistance to irradiation of siloxane polymers and the physical and mechanical properties of vulcanizates. The authors synthesized a number of new rubberlike siloxane polymers of high molecular weight (intrinsic viscosity in benzene, 1.2 to 1.9), with phenylene groups in the backbone and various aromatic groups and substituents at the Si atom. In one of the compounds, the $\text{CH}_2\text{CH}_2\text{CF}_3$ group is used as a substituent. The effect of phenylene groups on the properties of siloxane polymers was studied on copolymers containing,

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ACCESSION NR: AP3001404

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together with tetramethyldisiloxane $[(CH_3)_2SiOSi(CH_3)_2O]$ (A), 50 to 100 mol% 1-dimethylsilyl-4-dimethylsiloxy phenylene $[Si(CH_3)_2C_6H_4Si(CH_3)_2O]$ (B) groups. Copolymers containing 70 mol% of the B groups (I) have a limited elasticity at room temperature; those containing 60 and 50 mol% B group (II) are rubberlike. X-ray patterns and thermomechanical curves indicate that the homopolymer B_n is crystalline, that the crystalline phase is still present in I, and that II is fully amorphous. The glass-transition temperature of the copolymers is a linear function of B-group content: it drops from -23C for B_n to -123C for A_n. This article was presented by Academician S. S. Medvedev on 19 October 1962. Orig. art. has: 4 figures, 5 formulas, and 1 table.

ASSOCIATION: none

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 004

Card

2/2

18.1150, 18.5000

77429

SOV/130-60-1-12/22

AUTHOR: Belorusev, A. S. (Rolling Shop Foreman), Shvartsbart, Ya. S. (Deputy Chief of Rolling Shop)

TITLE: Mastering of Production of Coiled Bi-Metal Strip

PERIODICAL: Metallurg, 1900, Nr 1, pp 25-27 (USSR)

ABSTRACT: According to State Standards (GOST 5198-50) bi-metal TB-3 is a two-layer material which consists of two alloys with a different coefficient of expansion. The active layer is made of N24Kh2 alloy and has a greater coefficient of expansion $\geq 20 \cdot 10^{-6}$ per 1° C. The passive layer of N36 alloy has a smaller coefficient of expansion $\leq 1.5 \cdot 10^{-6}$ per 1° C. Chemical composition of alloys:

	C	Si	Mn	Ni	Cr	Fe
N24 Kh2	0.25-0.35	0.15-0.30	0.30-0.60	22-25	2.0-3.0	remainder
N36	He max 0.05	—	—	35-37	—	"

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Mastering of Production of Coiled BI-Metal Strip

77429

SOV/130-60-1-12/22

The alloy plates are welded together under pressure by hot rolling. An intermediate layer of oxidation-free pure iron obtained by electrolytic deposition insures good welding. The electrolytic solution consists of 400 g/liter iron vitriol, 150-200 g/liter sodium chloride, and 4 g/liter hydrochloric acid or sulphuric acid. Before rolling the alloy, plates are welded along the perimeter. (Submerged arc welding, electrode, 3 mm diam Kh18N9T-steel rod; flux, OSTs-45). The welding seam protects the iron from oxidation during heating before rolling. Hot rolling has to be done not later than 48 hr after welding, and must produce a straight sheet without lamination. This is achieved by the following method: (a) The upper layer of the plate should be N36-alloy; (b) The last rolling pass must be between the center and the bottom rolls of the three-high mill (350 mm and 750 mm diam, respectively). Sequency of operations: (1) Heating of TB-3 plate in mazut fired (mazut is Russian petroleum residue used as fuel oil) continuous

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Mastering of Production of Coiled Bi-Metal
Strip

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SOV/130-00-1-12,22

furnace (temperature at delivery, 1200° C, heating time 80 min); (2) Reduction in rolling mill (from 20 to 30% per pass); (3) Heating to 400-600° C; (4) Cutting of intermediate product on rotary shears; (5) Pickling in acid solution; (6) Magnetic inspection of proper position of component layers (magnetic component N36 on top of non-magnetic N24Kh2); (7) Trimming; (8) Butt welding and coiling of strips; (9) Flash removal; (10) Heat treatment of coils in dry hydrogen atmosphere as follows: (a) Heating to 950° C and holding each 100 kg. of coil 15 min; (b) cooling under the muffle for 7 hr, then in air. (11) Cold rolling on two quarts mills at speeds not over 15 m/min to avoid excessive heating of rolls and prevent warping of the strip; (12) Cutting to size. The samples taken from each coil are tested for sensitivity coefficient, electric resistance, welding strength, and variation of layer thickness. The technology of producing bi-metal was developed with the participation of: G. G. Kuznetsov, V. N. Zhuchin, A. A. Diomiolova, B. N.

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Mastering of Production of Coiled Bi-Metal
Strip

77429
SOV/130-60-1-12/22

Popov, V. S. Nikol'skiy, Yu. P. Karasev, G. N. Novikov,
and B. S. Vaganov. There is 1 table; and 2 figures.

ASSOCIATION: "Elektrostal'" Plant (Zavod "Elektrostal'")

Card 4/4

SOV/126-7-4-21/26

AUTHORS: Mironov, L.V. and Shvartsbart, Ya.S.

TITLE: On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 4, pp 631-632 (USSR)

ABSTRACT: It has been shown (Ref 1 and 2) that the formation of texture during annealing of cold-rolled transformer steel is associated with the secondary recrystallization. The most perfect texture is formed at the temperatures at which the secondary recrystallization begins (900 to 950°C), when the "nuclei of growth" are constituted by most accurately orientated grains (Ref 1). The process is comparatively slow at these temperatures, requiring 3 to 5 hours for its completion. The slow rate of secondary recrystallization during high temperature annealing makes it necessary to limit the rate of heating and precludes the possibility of the application of fast methods of annealing (induction heating, annealing in conveyor furnaces). The object of the investigation described in the present paper was to check the claims made by Umansky and Finkel'shteyn (Ref 3) that

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SOV/126-7-4-21/26

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

the secondary recrystallization can be accelerated if the metal is slightly deformed before the high temperature annealing. Transformer steel of the usual composition (0.012% C, 3.10% Si, 0.09% Mn, 0.005% S, 0.01% P) cold-rolled to 0.35 mm thickness and showing clearly a tendency to secondary recrystallization completed in 4 hours at 920°C, under which conditions clearly pronounced texture, reaching 90 to 95% oriented grains, was formed, was used in the experiments. Preliminary experiments showed that low temperature annealing (i.e. below the temperature at which secondary recrystallization begins) has no effect either on the parameters of the secondary recrystallization or on the final texture formed during subsequent high temperature treatment. The experimental specimens, annealed for 2 hours at 800°C, were cold-rolled to 2.5, 5.0, 7.5 and 10% deformation and then annealed at various temperatures between 700 and 1100°C. It was found that no secondary recrystallization had occurred in any of these specimens,

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SOV/126-7-4-21/26

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

in which the normal recrystallization only took place. The grain size was determined by the degree of deformation and the annealing temperature, the largest grains being obtained in specimens with 2.5 and 5% deformation annealed at 750 to 800°C; increasing the annealing temperature or the degree of deformation resulted in the reduction of the grain size after recrystallization. It should be mentioned here that in specimens with the critical degree of deformation, faint texture was formed during annealing, even in those cases when the recrystallization led to the formation of grains of maximum size. In this case, texture did not exceed 20 to 25% (i.e. the magnitude which is observed in material annealed below the temperatures of secondary recrystallization). It has been shown, therefore, that subjecting the specimens to critical deformation not only did not accelerate the secondary recrystallization but retarded it, substantially lowering the final degree of the perfection of texture. The works'

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SOV/126-7-4-21/26

On the Effect of Light Plastic Deformation on the Secondary
Recrystallization and on the Formation of Texture in Cold-Rolled
Transformer Steel

trials conducted in the plant "Elektrostal" consisted of the following: transformer steel, cold-rolled to 0.53 mm, was annealed in a conveyor furnace at 950°C, the conveyor speed being 3 m/min, which corresponded to 2 minutes' holding of the metal in the heating zone; after this treatment the strip was cold-rolled to the final thickness of 0.5 mm and annealed for 4 hours at 1150°C in a bell furnace; another part of the same consignment of steel was fabricated in the form of strip 0.5 mm thick by the usual method i.e. without the application of the critical deformation before the final annealing. The properties of these two types of materials are given in the table on p 632 under the following headings: treatment (with the application of critical deformation; by the normal method); the direction in which the test piece was cut out from the strip (longitudinal, transverse, longitudinal, transverse); specific losses, W/kg, P_{10/50} and P_{15/50}; magnetic induction, B₂₅, gauss; grain size, mm²; degree of

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SOV/126-7-4-21/26

On the Effect of Light Plastic Deformation on the Secondary
Recrystallization and on the Formation of Texture in Cold-Rolled
Transformer Steel

perfection of texture, % of the orientated grains.
The application of the critical deformation can be
recommended in cases when it is required to use cold-
rolling for fabricating isotropic materials, eg cold-
rolled transformer steel with a low degree of texture.
There is 1 table and 3 references, 2 of which are Soviet
and 1 German.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh
metallov zavod "Elektrostal'" (Ural Scientific-Research Institute
for Ferrous Metals, Plant "Elektrostal'")

SUBMITTED: August 6, 1958

Card 5/5

18.7100

77590

SOV/129-60-2-3/13

AUTHOR: Shvartsbart, Ya. S. (Engineer)

TITLE: Improvement of Plasticity of Textured Silicon Steel

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 2, pp 11-13 (USSR)

ABSTRACT: The application of textured silicon steel (cold rolled transformer steel) for shielding communication main cables and wound magnetic circuits called for improved plastic properties of that steel. Plant "Elektrostal'" (zavod Elektrostal') carried out experiments with the above steel containing Si, 3.17; C, 0.03; Mn, 0.08; P, 0.007; and S, 0.007%. A piece of 0.5 mm thick strip was obtained by double cold rolling of 2.5 mm thick strip with intermediate recrystallization when strip was 1 mm thick. Subsequently, it was annealed for 6 hrs at 1,100° C. Since plasticity of such specimens was low (it could be bent only once) subsequent experiments concerned various heat treatment methods to

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Improvement of Plasticity of Textured
Silicon Steel

77590

SOV/129-60-2-3/13

transform the carbide phase into solid solution. Heat treatment consisted of heating to 500-1,000° C, holding for 2 min and water quenching. Highest plasticity was achieved when quenching from 800° C which resulted in a maximum number of bends (Fig. 2). This increase of plasticity with a corresponding decrease of grain boundaries thickness is explained as follows: Fe-Si alloys containing 3% Si and more than 0.01-0.02 C transform from α - to $\alpha + \gamma$ -phase at 800° C. During slow cooling austenite grains transform to α -phase plus carbide. Hence, the structure of strip annealed at high temperature is characterized by an accumulation of the carbide phase. As a result of heating such strip to temperatures below the transformation point, i.e., below 800° C, the carbide phase dissolves in α -iron. This state of solid solution is set by subsequent rapid cooling. The determined optimal temperature rates of heat treating were used for plasticity increase of high temperature annealed

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77590, SOV/129-60-2-3/13

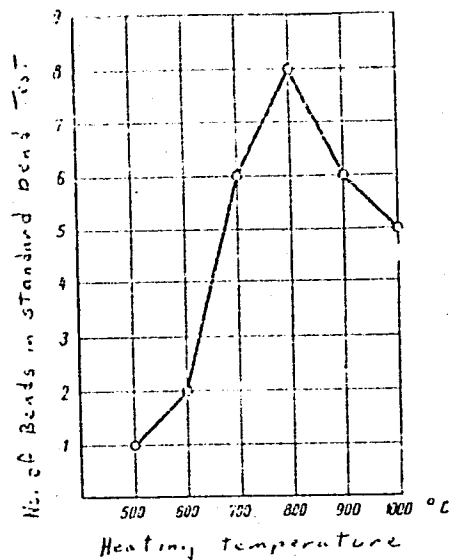


Fig. 2. Effect of heating for hardening temperature on plasticity of 0.5 mm textured silicon steel strip (3% Si).

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Improvement of Plasticity of Textured
Silicon Steel

77590
SOV/129-60-2-3/13

industrial batches of transformer steel. For this purpose a muffle furnace with approximately 6 m long heating chamber and a 9 m long cooling chamber with water cooled hollow walls was used. Dry hydrogen was fed continuously to both heating and cooling chambers. The rate of strip travel in the furnace was 3 m/min. The temperature of the external wall of the muffle was 850° C to compensate the temperature gradient between the external wall and the strip. The tests of ~~so~~ heat treated preliminarily annealed (for 6 hrs at 1,100° C) batches of industrial 0.5 mm thick transformer steel strip showed considerable increase of its plasticity. There are 3 figures; 1 table; and 2 German references.

ASSOCIATION: Plant "Elektrostal'" (zavod Elektrostal')

Card 4/4

SHVARTSBART, Ya.S., inzh.

Shielding of main communication lines is a new field for the use
of texturized 3 % silicon steel. Elektrichestvo no. 11:84-86
N '60. (MIRA 13:12)
(Electric lines) (Shielding (Electricity))
(Steel alloys)

SHVARTSBART, Ya.S., inzh.

Dynamics of loading in the main drive line of a sheet-
rolling mill. Izv. vys. ucheb. zav.; mashinostr. no.9:
235-246 '63. (MIRA 17:3)

1. Zavod "Elektrostal'".

L 15268-65 EWT(m)/EWA(d)/EPR/EWP(t)/EWP(b) Ps-4 IJP(c) MJW/JD/JG
 ACCESSION NR: AP5001438 S/0133/64/000/008/0754/0756

AUTHOR: Barkaya, D. S. (Engineer); Belous, Yu. V. (Engineer); Nikol'skiy, V. S. (Engineer); Shvartsbart, Ya. S. (Engineer) B

TITLE: Effect of the technological process of treating iron-chromium-aluminum alloys on surface quality and service life of heating elements ~1 ~1 ~1

SOURCE: Stal', no. 8, 1964, 754-756

TOPIC TAGS: ferroalloy, chromium containing alloy, aluminum containing alloy, corrosion resistant alloy/EI-626 alloy

Abstract: A high stability of heaters made from iron-chromium-aluminum alloy EI-626 is achieved by a thorough cleansing of the surface to remove contaminations associated with the reduction process. The Cl⁻ ions which form during the lime-salt coating of the wire prior to drawing decrease the stability of the metal of the heaters to gaseous corrosion in the course of service. Polishing of the wire in its final size is very effective. Orig. art. has 1 table.

ASSOCIATION: Zavod "Elektrostal'" (Electrostal Plant)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 001

OTHER: 001

JPRS

Card 1/1

1. The purpose of this document is to provide a detailed description of the design and construction of the electronic equipment described in the preceding document.

The equipment is designed to provide a reliable and accurate measurement of the power output of a transformer. It is designed to be used in a laboratory or industrial setting.

(SERA 18.7)

2. The equipment is designed to be used in a laboratory or industrial setting.

S/793/62/000/000/004/006
A004/A126

AUTHOR: Shvartsbart, Ya.S., Engineer

TITLE: The characteristic features of deformation on the Lauth three-high mill

SOURCE: Teoriya prokatki; materialy konferentsii po teoreticheskim voprosam prokatki. Moscow, Metallurgizdat, 1962, 600 - 602

TEXT: The Lauth three-high mill of the "Elektrostal'" Plant shows two characteristic features: 1) the outer-to-middle roll diameter ratio is $\frac{150}{150} = 2.14$; this ratio usually is 1.5; 2) the complex assortment of the mill. The reduction in rolling could be increased since calculations revealed a 300% strength reserve of the rolls, these calculations being carried out with the A.F. Tselikov formula. A test series was performed to establish the actual loads on the rolls and the drive of the mill. The torques on the crankshaft and their distribution over the spindles as well as the pressure on the adjusting screws were determined by means of resistance-type wire pickups. It was found that the volumetrically stressed state during rolling on the Lauth three-high mill was.

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characterized by the action of additional horizontal shear stresses. In leaving the roll throat, the strip bends near the middle roll, which indicates the existence of a considerable drop in the discharge rate over the cross section of the strip being rolled. It was found that the drop in discharge rate was directly connected with a drop in forward flow between both sides of the strip. Based on the test results it can be said that, in rolling on the Lauth three-high mill, the critical cross section runs not parallel to the discharge plane, while the equation of characteristic angles for the asymmetric process should be derived taking into account the horizontal rolling forces.

ASSOCIATION: "Elektrostal'" Plant

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